

WHAT IS CLAIMED IS:

1. A radio base station/radio base station controller
for carrying out communication with a mobile station by
5 using a radio channel, comprising:

a control unit for controlling a connected state in
which the radio channel for carrying out communication with
the mobile station is secured and a dormant state in which a
call is brought into a suspended state and the radio channel
10 is disconnected;

a memory for storing an inactivity timer value as a
timing when the connected state is changed to the dormant
state, according to one of an application type, a connection
destination type, and a traffic pattern; and

15 an inactivity timer for starting to count up in
response to reception of a packet from the mobile station or
transmission of a packet to the mobile station,

wherein in a case where the radio base station/radio
base station controller transmits or receives data to or
20 from the mobile station, the control unit acquires
information of one of the application type, the connection
destination type, and the traffic pattern in the transmitted
or received data,

the control unit refers to the memory on the basis of
25 the acquired information of one of the application type, the
connection destination type, and the traffic pattern to
obtain an inactivity timer value and sets the inactivity
timer value, and

when a count value of the inactivity timer reaches the set inactivity timer value, the control unit carries out a control to change the connected state to the dormant state.

5 2. A radio base station/radio base station controller according to claim 1, wherein:

the memory further stores the inactivity timer value for each of the application type, the connection destination type, and the traffic pattern correspondingly to user information; and
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the control unit further acquires the user information and sets the inactivity timer value for each user and for each of the application type, the connection destination type or the traffic pattern.
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3. A radio base station/radio base station controller according to claim 1, wherein in a case where a plurality of inactivity timer values are set in a predetermined time, the control unit gives priority to a larger or smaller value, and sets it as the inactivity timer value for a previously fixed period.
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4. A radio base station/radio base station controller according to claim 1, wherein in a case where a plurality of inactivity timer values are set in a predetermined time, the control unit sets an average value of those as the inactivity timer value for a previously fixed period.
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5. A radio base station/radio base station controller according to claim 1, wherein:

the application type is for identifying an application used in communication with the mobile station as one for an internet or one for a WAP; and

in a case where the application type is the internet, the control unit sets, as the inactivity timer value, a period longer than that for the WAP.

6. A radio base station/radio base station controller according to claim 1, wherein port information included in a TCP header or a UDP header is used as the information of the application type or the connection destination type.

7. A radio base station/radio base station controller according to claim 1, wherein:

the traffic pattern indicates contract information of the mobile station in a connected state; and

the control unit sets the inactivity timer value according to the contract information of the mobile station.

8. A radio base station/radio base station controller according to claim 1, wherein:

the traffic pattern indicates a past communication amount of the mobile station; and

the control unit sets the inactivity timer value according to the past communication amount.

9. A radio base station/radio base station controller according to claim 1, wherein:

the traffic pattern indicates a past communication content of the mobile station; and

5 the control unit sets the inactivity timer value according to the past communication content.

10. A mobile station for carrying out communication with a radio base station/radio base station controller by using a radio channel, comprising:

15 a control unit for controlling a connected state in which the radio channel for carrying out communication with the radio base station/radio base station controller is secured and a dormant state in which a call is brought into a suspended state and the radio channel is disconnected;

a memory for storing an inactivity timer value as a timing when the connected state is changed to the dormant state, according to one of an application type, a connection destination type, and a traffic pattern; and

20 an inactivity timer for starting to count up in response to reception of a packet from the radio base station/radio base station controller or transmission of a packet to the radio base station/radio base station controller,

25 wherein in a case where the mobile station transmits or receives data to or from the radio base station/radio base station controller, the control unit acquires information of one of the application type, the connection

destination type, and the traffic pattern in the transmitted or received data,

the control unit refers to the memory on the basis of the acquired information of one of the application type, the connection destination type, and the traffic pattern to obtain an inactivity timer value and sets the inactivity timer value, and

when a count value of the inactivity timer reaches the set inactivity timer value, the control unit carries out a control to change the connected state to the dormant state.

11. A mobile station according to claim 10, wherein:

the mobile station transmits a configuration request to the base station/base station controller;

the base station/base station controller transmits a configuration response including a held correspondence table of the inactivity timer value with respect to one of the application type, the connection type, and the traffic pattern to the mobile station; and

the mobile station receives the configuration response and stores the correspondence table in the memory.

12. A state control method of a radio base station/radio base station controller, for controlling a connected state in which a radio channel for carrying out communication between the radio base station/radio base station controller and a mobile station is secured and a

dormant state in which a call is brought into a suspended state and the radio channel is disconnected, wherein:

in a case where the radio base station/radio base station controller transmits or receives data to or from the mobile station, a control unit acquires information of one of an application type, a connection destination type, and a traffic pattern in the transmitted or received data;

an inactivity timer value as a timing when the connected state is changed to the dormant state is set on the basis of the acquired information of one of the application type, the connection destination type, and the traffic pattern, and

when a count value of an inactivity timer, which starts to count up in response to transmission/reception of a packet from a specified mobile station or to the mobile station, reaches the set inactivity timer value, a control to change the connected state to the dormant state is carried out.

13. A state control method of a mobile station, for controlling a connected state in which a radio channel for carrying out communication between a radio base station/radio base station controller and the mobile station is secured and a dormant state in which a call is brought into a suspended state and the radio channel is disconnected, wherein:

in a case where the mobile station transmits or receives data to or from the radio base station/radio base

station controller, information of one of an application type, a connection destination type, and a traffic pattern in the transmitted or received data is acquired;

an inactivity timer value as a timing when the
5 connected state is changed to the dormant state is set on the basis of the acquired information of one of the application type, the connection destination type, and the traffic pattern, and

when a count value of an inactivity timer, which
10 starts to count up in response to transmission/reception of a packet from a specified radio base station/radio base station controller or to the radio base station/radio base station controller, reaches the set inactivity timer value, a control to change the connected state to the dormant state
15 is carried out.